

CLAIMS

What is claimed is:

1. A method comprising:
time-stamping each of a plurality of packets;
storing a subset of the time-stamped packets on a storage medium;
reading back at playback time the stored packets with their timestamps from the storage medium; and
reconstructing a partial transport stream using the packets and their timestamps read back, wherein the packets are arranged in the partial transport stream in response to their timestamps.
2. The method of claim 1, further comprising:
receiving a full transport stream; and
filtering the full transport stream to generate the subset of time-stamped packets.
3. The method of claim 1, wherein the storage medium is an external memory.
4. The method of claim 3, wherein the external memory comprises a double data rate memory (DDR).
5. The method of claim 1, wherein time-stamping includes recording a value of a counter for each of the plurality of packets.

6. The method of claim 5, wherein the counter is a system time clock counter.
7. A method comprising:
 - reading a plurality of chunks of a partial transport stream from a storage medium;
 - parsing a lead packet of each of the plurality of chunks to extract the temporal information of the lead packet; and
 - reconstructing the partial transport stream using the extracted temporal information and the plurality of chunks, wherein the lead packet is placed in the partial transport stream in response to the temporal information.
8. The method of claim 7, wherein the storage medium is an external memory.
9. The method of claim 8, wherein the external memory comprises a double data rate memory (DDR).
10. The method of claim 7, wherein the lead packet is a program clock reference (PCR) packet.
11. The method of claim 7, wherein the temporal information includes the chunk length of the chunk associated with the lead packet.
12. The method of claim 7, wherein the temporal information includes the release time of the lead packet.

13. A method comprising:
- detecting a signal;
 - dynamically selecting a first or a second modes in response to the signal,
 - wherein the first mode includes
 - time-stamping each of a plurality of packets,
 - storing a subset of the time-stamped packets on a storage medium,
 - reading at playback time the stored packets from the storage medium, and
 - reconstructing a first partial transport stream using the timestamps of the plurality of packets, wherein the plurality of packets are arranged in the first partial transport stream in response to the timestamps; and
 - wherein the second mode includes
 - reading a plurality of chunks of a second partial transport stream from the storage medium,
 - parsing a lead packet of each of the plurality of chunks to extract the temporal information of the lead packet within the second partial transport stream, and
 - reconstructing the second partial transport stream using the extracted temporal information and the plurality of chunks, wherein the lead packet is placed in the second partial transport stream in response to the temporal information.
14. The method of claim 13, wherein the storage medium is an external memory.
15. The method of claim 14, wherein the external memory includes a double data rate memory (DDR).

16. A method comprising:
- receiving an annotated partial transport stream from an external source;
 - storing a plurality of time-stamped packets from the partial transport stream on a storage medium;
 - reading back at playback time the stored time-stamped packets from the storage medium; and
 - reconstructing the partial transport stream using the plurality of time-stamped packets, the plurality of time-stamped packets being arranged in response to their timestamps.
17. The method of claim 16, wherein the storage medium is an external memory.
18. The method of claim 17, wherein the external memory includes a double data rate memory (DDR).
19. A system comprising:
- a storage medium;
 - a transport processor coupled to the storage medium, the transport processor operable to time-stamp each of a plurality of packets received and to store one or more of the time-stamped packets on the storage medium; and
 - a playback device coupled to the storage medium, the playback device operable to read back the stored packets from the storage medium and to reconstruct at playback time

a partial transport stream with the packets read back and the timestamps of the packets read back.

20. The system of claim 19, wherein the storage medium includes an external memory.

21. The system of claim 20, wherein the external memory includes a double data rate memory (DDR).

22. The system of claim 19, wherein the transport processor comprises a filter to turn an incoming full transport stream into a partial transport stream, the partial transport stream includes the one or more of the plurality of packets.

23. The system of claim 22, wherein the transport processor further comprises a system time clock (STC) counter to record the time when each of the plurality of packets is received.

24. A system comprising:
a storage medium; and
a playback device coupled to the storage medium, the playback device including
an interface to read a plurality of chunks of a partial transport stream from
the storage medium, each of the plurality of chunks including a lead packet,

a parser to parse the lead packet to extract the temporal information of the partial transport stream, and

a processing logic module to reconstruct the partial transport stream with the temporal information and the plurality of chunks.

25. The system of claim 24, wherein the storage medium includes an external memory.

26. The system of claim 25, wherein the external memory includes a double data rate memory (DDR).

27. The system of claim 24, wherein the lead packet is a program clock reference (PCR) packet.

28. The system of claim 24, wherein the temporal information includes the chunk length of the chunk associated with the lead packet.

29. The system of claim 24, wherein the temporal information includes the release time of the lead packet of each of the plurality of chunks.

30. A system comprising:

a storage medium;

a playback device coupled to the memory;

a processor coupled to the storage medium operable to receive a signal and to dynamically select a first mode or a second mode in response to the signal,

wherein the first mode comprises

- time-stamping each of a plurality of packets,
- storing a subset of the time-stamped packets on the storage medium,
- reading at playback time the stored packets from the storage medium, and
- reconstructing a first partial transport stream with the packets read; and

wherein the second mode comprises

- reading a plurality of chunks of a second partial transport stream from the storage medium, each of the plurality of chunks including a lead packet,
- parsing a lead packet of each of the plurality of chunks to extract the temporal information of the lead packet in the second partial transport stream, and
- reconstructing the second partial transport stream with the temporal information of the lead packets and the plurality of chunks.

31. The system of claim 30, wherein the storage medium includes an external memory.
32. The system of claim 31, wherein the external memory includes a double data rate memory (DDR).
33. The system of claim 31, wherein the external memory includes a hard disk.